

**PART M**  
**GUARDING TOOLS AND EQUIPMENT, FARM SHOPS; MATERIALS HANDLING**

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*Note: WAC 296-307-18005, WAC 296-307-18010, WAC 296-307-18015, WAC 296-307-18020 and WAC 296-307-18025 are moved to Part M. These sections contain guarding requirements which were inadvertently adopted at the end of Part L instead of Part M.*

**WAC 296-307-18005 How must fan blades be guarded?** You must guard the blades of a fan located less than seven feet above the floor or working level. The guard must have maximum openings of one-half inch.  
[Statutory Authority: Chapter 49.17.040 RCW. 98-24-096 (Order 98-13), § 296-307-18005, filed 12/01/98, effective 03/01/99.]

**WAC 296-307-18010 How must constant-running drives be guarded?** Shields, guards, and access doors that will prevent accidental contact with rotating machine parts on constant-running drives must be in place when the machine is running.

*Exception: This requirement does not apply to combines when guards could create fire hazards.*

“Constant-running drives” means drives that continue to rotate when the engine is running and all clutches are disengaged.

[Statutory Authority: Chapter 49.17.040 RCW. 98-24-096 (Order 98-13), § 296-307-18010, filed 12/01/98, effective 03/01/99.]

**WAC 296-307-18015 What training must an employer provide for employees who use agricultural equipment?** At the time of initial assignment and at least annually thereafter, you must instruct every employee in the safe operation and servicing of all equipment that the employee will use, including at least the following:

- (1) Keep all guards in place when the machine is in operation.
- (2) Only persons required for instruction or machine operation may ride on equipment, unless a passenger seat or other protective device is provided.
- (3) Stop engine, disconnect the power source, and wait for all machine movement to stop before servicing, adjusting, cleaning, or unclogging the equipment.

*Exception: When the machine must be running to be properly serviced or maintained, you must instruct employees in the steps and procedures necessary to safely service or maintain the equipment.*

- (4) Make sure everyone is clear of machinery before starting the engine, engaging power, or operating the machine.
- (5) Lock out electrical power before performing maintenance or service on farmstead equipment.

[Statutory Authority: Chapter 49.17.040 RCW. 98-24-096 (Order 98-13), § 296-307-18015, filed 12/01/98, effective 03/01/99].

**WAC 296-307-18020 What requirements apply to machine controls?**

- (1) If machine operation requires the presence of an operator on the machine, a “stop” button must be provided on the machine within reach of the operator.
- (2) Power and control devices must be marked to indicate the function and machine they control. “On” and “off” must be marked.
- (3) “Stop” buttons must be red or orange. Each machine must have one or more stop buttons according to the working position of the operators.
- (4) Power control devices must be located or guarded to prevent unexpected or accidental movement of the control. “Start” buttons must be recessed.

[Statutory Authority: Chapter 49.17.040 RCW. 98-24-096 (Order 98-13), § 296-307-18020, filed 12/01/98, effective 03/01/99].

**WAC 296-307-18025 How must steam pipes be guarded?**

- (1) All steam pipes or pipes hot enough to burn a person (other than coil pipes, radiators for heating rooms or buildings, or pipes on portable steam engines and boilers) must be guarded with a standard safeguard, unless guarded by location.

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**WAC 296-307-18025 (Cont.)**

- (2) All exposed hot pipes within seven feet of the floor or working platform, or within fifteen inches measured horizontally from stairways, ramps, or fixed ladders, must be covered with insulating material or be guarded to prevent contact.

[Statutory Authority: Chapter 49.17.040 RCW. 98-24-096 (Order 98-13), § 296-307-18025, filed 12/01/98, effective 03/01/99].

**WAC 296-307-185 Guarding powered saws.**

[Recodified as § 296-307-185. 97-09-013, filed 4/7/97, effective 4/7/97. Statutory Authority: RCW 49.17.040, [49.17.]050 and [49.17.]060. 96-22-048, § 296-306A-185, filed 10/31/96, effective 12/1/96.]

**WAC 296-307-18503 What general requirements apply to powered saws?**

- (1) You must ensure that all cracked saw blades are removed from service, except as indicated in WAC 296-307-18515(6).
- (2) Inserting a wedge between a saw disk and its collar to form a “wobble saw” for rabbeting or dadoing is prohibited.

*Exception: This does not apply to properly designed adjustable rabbeting blades.*

- (3) You must provide and ensure that employees use push sticks or push blocks in sizes and types suitable for the work to be done.

[Statutory Authority: Chapter 49.17.040 RCW. 98-24-096 (Order 98-13), § 296-307-18503, filed 12/01/98, effective 03/01/99. [Recodified as § 296-307-18503. 97-09-013, filed 4/7/97, effective 4/7/97. Statutory Authority: RCW 49.17.040, [49.17.]050 and [49.17.]060. 96-22-048, § 296-306A-18503, filed 10/31/96, effective 12/1/96.]

**WAC 296-307-18506 How must band saws be guarded?**

- (1) You must ensure that all band wheels are completely encased or guarded on both sides. Guards must be constructed of at least No. 14 U.S. gauge metal, nominal two-inch wood material, or mesh or perforated metal of at least U.S. gauge No. 20 with maximum openings of three-eighths inch.
- (2) You must ensure that all nonworking portions of the band saw blade are enclosed or guarded. The working side of the blade between the guide and the table may be left open to work on the stock.
- (3) You must ensure that the guard for the portion of the blade between the sliding guide and the upper-saw-wheel guard protects the saw blade at the front and outer side.

[Statutory Authority: Chapter 49.17.040 RCW. 98-24-096 (Order 98-13), § 296-307-18506, filed 12/01/98, effective 03/01/99. [Recodified as § 296-307-18506. 97-09-013, filed 4/7/97, effective 4/7/97. Statutory Authority: RCW 49.17.040, [49.17.]050 and [49.17.]060. 96-22-048, § 296-306A-18506, filed 10/31/96, effective 12/1/96.]

**WAC 296-307-18509 How must radial arm saws be guarded?**

- (1) You must ensure that the upper hood completely encloses the upper portion of the blade, including the end of the saw arbor. The upper hood must be constructed to protect the operator from flying material, and to deflect sawdust. The sides of the lower exposed portion of the blade must be guarded to the full diameter of the blade by a device that will automatically adjust itself to the thickness of the stock and remain in contact with stock. You may use an alternative lower blade guard if it provides equivalent protection.
- (2) You must provide an adjustable stop to prevent the forward travel of the blade beyond the position necessary to complete the cut.
- (3) You must equip a radial arm-saw with a mechanism to return the saw and keep it in position at the back of the table or behind the rip fence.

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### WAC 296-307-18509 (Cont.)

For example: You may use a counter-weight or a saw retractor device, or tilt the front of the radial arm saw unit up enough to maintain the blade at the back of the table or behind the rip fence when the pull handle is released by the operator.

- (4) You must ensure that ripping and ploughing are permitted only against the direction in which the saw turns. Mark the direction of the saw rotation on the hood, and attach a permanent warning sign to the rear of the guard that prohibits ripping or ploughing from that position. (Where the blade teeth exit the upper hood when set up for ripping would be the rear of the saw in this case.) Each radial arm saw used for ripping must be provided with antikickback fingers or dogs to prevent the saw from throwing the material or stock back at the operator.

[Statutory Authority: Chapter 49.17.040 RCW. 98-24-096 (Order 98-13), § 296-307-18509, filed 12/01/98, effective 03/01/99. [Recodified as § 296-307-18509. 97-09-013, filed 4/7/97, effective 4/7/97. Statutory Authority: RCW 49.17.040, [49.17.]050 and [49.17.]060. 96-22-048, § 296-306A-18509, filed 10/31/96, effective 12/1/96.]

### WAC 296-307-18512 How must table saws be guarded?

- (1) You must ensure that each circular blade table saw used for ripping or crosscutting is guarded by a standard hood that covers the saw blade above the material completely at all times during the cut. The hood must adjust itself automatically to the thickness of, and must remain in contact with, the material being cut.

*Exception: When finished surfaces of stock may be marred by the guard, it may be raised slightly to avoid contact. The hood must be designed to protect the operator from flying material.*

- (2) You must ensure that any table saw used for ripping has antikickback fingers or dogs and a spreader.
- (3) While used for rabbeting, ploughing, grooving or dadoing a table saw may be used without an antikickback device and a spreader. Upon completion, the antikickback device and spreader must be replaced immediately.
- (4) You must ensure that the part of the table saw that is beneath the table is fully guarded to prevent employee contact with the portion of the blade below the table.
- (5) Power transmission components of table saws must be guarded according to WAC 296-307-280.

[Statutory Authority: Chapter 49.17.040 RCW. 98-24-096 (Order 98-13), § 296-307-18512, filed 12/01/98, effective 03/01/99. [Recodified as § 296-307-18512. 97-09-013, filed 4/7/97, effective 4/7/97. Statutory Authority: RCW 49.17.040, [49.17.]050 and [49.17.]060. 96-22-048, § 296-306A-18512, filed 10/31/96, effective 12/1/96.]

### WAC 296-307-18515 How must circular fuel-wood saws be guarded?

- (1) You must ensure that fuel-wood saws are guarded by a standard guard that completely encloses the blade to the depth of the teeth, except for the area where material is fed into the blade.
- (2) You must ensure that the tables of fuel-wood saws is constructed so that material being sawed is supported on both sides of the blade.
- (3) You must provide a mechanism that will prevent the leading edge of the saw from passing the front edge of the table or roll case.
- (4) You must provide tilting tables of fuel-wood saws with a backrest for the full length of the table. The backrest must extend upward from the table platform at least to the height of the saw opening. An opening in a backrest must be a maximum of two inches. The backrest frame and filler must be constructed of material strong and rigid enough to prevent distortion under normal use.

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**WAC 296-307-18515 (Cont.)**

- (5) Power transmission components of fuel-wood saws must be guarded according to WAC 296-307-280.
- (6) When a circular fuel-wood saw blade develops a crack, you must discontinue its use until properly repaired, according to the following measurements.

Length of Crack	Diameter of saw (inches)
1/2"	12"
1"	24"
1 1/2"	36"

[Statutory Authority: Chapter 49.17.040 RCW. 98-24-096 (Order 98-13), § 296-307-18515, filed 12/01/98, effective 03/01/99. [Recodified as § 296-307-18515. 97-09-013, filed 4/7/97, effective 4/7/97. Statutory Authority: RCW 49.17.040, [49.17.]050 and [49.17.]060. 96-22-048, § 296-306A-18515, filed 10/31/96, effective 12/1/96.]

**WAC 296-307-190 Guarding bench grinders, abrasive wheels, and portable grinders.**

[Statutory Authority: Chapter 49.17.040 RCW. 98-24-096 (Order 98-13), § 296-307-190, filed 12/01/98, effective 03/01/99. [Recodified as § 296-307-190. 97-09-013, filed 4/7/97, effective 4/7/97. Statutory Authority: RCW 49.17.040, [49.17.]050 and [49.17.]060. 96-22-048, § 296-306A-190, filed 10/31/96, effective 12/1/96.]

**WAC 296-307-19003 What definitions apply to this section?**

**“Abrasive wheel”** means a cutting tool consisting of abrasive grains held together by organic or inorganic bonds. This includes diamond and reinforced wheels.

**“Flanges”** means collars, discs, or plates between which wheels are mounted. Also referred to as adapter, sleeve, or back.

**“Mounted wheels”** means wheels of various dimensions that are usually 2 inches in diameter or smaller. They can be either organic or inorganic bonded abrasive wheels. They are secured to plain or threaded steel mandrels.

**“Off-hand grinding”** means grinding material or a part that is held in the operator’s hand.

**“Portable grinding”** means the grinding machine is hand-held and may be easily moved from one location to another.

**“Reinforced wheels”** means a class of organic wheels that contain strengthening fabric or filament. “Reinforced” does not mean wheels using such mechanical additions as steel rings, steel cup backs, or wire or tape winding.

**“Safety guard”** means an enclosure designed to restrain the pieces of the grinding wheel and protect the operator in the event that the wheel is broken in operation. [Recodified as § 296-307-19003. 97-09-013, filed 4/7/97, effective 4/7/97. Statutory Authority: RCW 49.17.040, [49.17.]050 and [49.17.]060. 96-22-048, § 296-306A-19003, filed 10/31/96, effective 12/1/96.]

**WAC 296-307-19006 What rules apply to guarding abrasive wheels?**

- (1) Abrasive wheels must be used only on machines provided with safety guards.

*Exception: This requirement does not apply to the following:*

- (a) Wheels used for internal work while the wheel is within the work being ground.
- (b) Mounted wheels 2 inches and smaller in diameter, used in portable operations.

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**WAC 296-307-19006 (Cont.)**

- (c) Types 16, 17, 18, 18R, and 19 cones, plugs, and threaded hole pot balls where the work offers protection.
  - (d) Specially shaped “sickle grinding” wheels mounted in mandrel-type bench or floor stands.
- (2) The safety guard must cover the spindle end, nut, and flange projections.

*Exceptions:*

- (a) When the work provides protection to the operator, the spindle end, nut, and outer flange may be exposed. When the work entirely covers the side of the wheel, the side covers of the guard may be omitted.
  - (b) The spindle end, nut, and outer flange may be exposed on portable machines designed for, and used with, type 6, 11, 27, and 28 abrasive wheels, cutting off wheels, and tuck pointing wheels.
  - (c) The spindle end, nut, and outer flange may be exposed on machines designed as portable saws.
- (3) The guard must cover the sides and periphery of the wheel.

*Exceptions:*

- (a) Bench and floor stands;
    - (i) The maximum permissible angle of exposure is 90°. This exposure must begin at a point not more than 65° above the horizontal plane of the wheel spindle.
    - (ii) Wherever the nature of the work requires contact with the wheel below the horizontal plane of the spindle, the exposure must not exceed 125°. This exposure must begin at a point not more than 65° above the horizontal plane of the wheel spindle.
  - (b) Swing-frame grinders may only be exposed on the bottom half; the top half of the wheel must be enclosed at all times.
  - (c) Where the work is applied to the top of the wheel, the exposure of the grinding wheel periphery must not exceed 60°.
  - (d) When the work entirely covers the side of the wheel, the side covers of the guard may be omitted.
- (4) The safety guard must be mounted to maintain proper alignment with the wheel, and the strength of the fastenings must exceed the strength of the guard.
- (5) Take care to see that the safety guard is properly positioned before starting the mounted wheel.
- (6) Abrasive wheel machinery guards must meet the design specifications of ANSI B7.1-1970.
- (7) Exception: WAC 296-307-19006 does not apply to natural sandstone wheels and metal, wooden, cloth, or paper discs, with a layer of abrasive on the surface.

[Statutory Authority: Chapter 49.17.040 RCW. 98-24-096 (Order 98-13), § 296-307-19006, filed 12/01/98, effective 03/01/99. Recodified as § 296-307-19006. 97-09-013, filed 4/7/97, effective 4/7/97. Statutory Authority: RCW 49.17.040, [49.17.]050 and [49.17.]060. 96-22-048, § 296-306A-19006, filed 10/31/96, effective 12/1/96.]

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**WAC 296-307-19009 What are the use, mounting, and guarding rules for abrasive wheels?**

- (1) Immediately before mounting, the operator must closely inspect and sound (ring test) all wheels to make sure they are not damaged. Before mounting the wheel, the operator must check the spindle speed of the machine to be certain that it does not exceed the maximum operating speed marked on the wheel.  
  
“Ring test” means to tap the wheel gently with a light nonmetallic implement, such as the handle of a screwdriver for light wheels, or a wooden mallet for heavier wheels.
- (2) Grinding wheels must fit freely on the spindle and remain free under all grinding conditions. The wheel hole must be made suitably oversized to ensure that heat and pressure do not create a hazard.
- (3) All contact surfaces of wheels, blotters, and flanges must be flat and free of foreign matter.
- (4) Bushings used in the wheel hole must not exceed the width of the wheel and must not contact the flanges.
- (5) On offhand grinding machines, work rests must be used to support the work. The work rest must be rigid and adjustable to compensate for wheel wear. Work rests must be kept adjusted closely to the wheel with a maximum opening of one-eighth inch to prevent the work from jamming between the wheel and the rest. The work rest must be securely clamped after each adjustment and shall not be adjusted with the wheel in motion.
- (6) Goggles or face shields must be used when grinding.
- (7) Nonportable grinding machines must be securely mounted on substantial floors, benches, foundations, or other adequate structures.
- (8) After mounting, abrasive wheels must be run at operating speed with the safety guard in place and properly adjusted, or in a protected enclosure for at least one minute before applying work. During this time, no one may stand in front of or in line with the wheel.
- (9) Grinders or abrasive wheels that vibrate or are out of balance must be repaired before use.
- (10) Abrasive wheels not designed for the machine or guard must not be mounted on a grinder.
- (11) Side grinding must only be performed with wheels designed for this purpose.

*Note: Light grinding on the side of straight wheels is permitted only when very delicate pressure is applied.*

- (12) Where the operator may stand in front of the opening, safety guards must be adjustable to compensate for wheel wear. The distance between the wheel periphery and the adjustable tongue or the guard above the wheel must not exceed one-quarter inch.

[Statutory Authority: Chapter 49.17.040 RCW. 98-24-096 (Order 98-13), § 296-307-19009, filed 12/01/98, effective 03/01/99.  
[Recodified as § 296-307-19009. 97-09-013, filed 4/7/97, effective 4/7/97. Statutory Authority: RCW 49.17.040, [49.17.]050 and [49.17.]060. 96-22-048, § 296-306A-19009, filed 10/31/96, effective 12/1/96.]

**WAC 296-307-19012 What requirements apply to flanges?**

- (1) Grinding machines must have flanges.
- (2) All abrasive wheels must be mounted between flanges that are at least one-third the diameter of the wheel. Regardless of flange type used, the wheel must always be guarded. Blotters must be used according to this section.

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**WAC 296-307-19012 (Cont.)**

- (3) Design and material requirements include:
- (a) Flanges must be designed to transmit the driving torque from the spindle to the grinding wheel.
  - (b) Flanges must be made of steel, cast iron, or other material of equal or greater strength and rigidity.
- (4) An abrasive wheel that is designed to be held by flanges must not be operated without them. Except for those types requiring flanges of a special design, flanges must be at least one-third the diameter of the wheel.
- (5) Facings of compressible material (blotters) must be inserted between the abrasive wheel and flanges to ensure uniform distribution of flange pressure.
- (6) All flanges must be maintained in good condition. When the bearing surfaces become damaged, they should be trued or refaced. When refacing or truing, exercise care to make sure that proper relief and rigidity is maintained before starting the wheel.

[Statutory Authority: Chapter 49.17.040 RCW. 98-24-096 (Order 98-13), § 296-307-19012, filed 12/01/98, effective 03/01/99. [Recodified as § 296-307-19012. 97-09-013, filed 4/7/97, effective 4/7/97. Statutory Authority: RCW 49.17.040, [49.17.]050 and [49.17.]060. 96-22-048, § 296-306A-19012, filed 10/31/96, effective 12/1/96.]

**WAC 296-307-19015 How must vertical portable grinders be guarded?** Safety guards on right angle head or vertical portable grinders must have a maximum exposure angle of 180°, and the guard must be between the operator and the wheel during use. The guard must be adjusted so that pieces of an accidentally broken wheel will be deflected away from the operator.

[Recodified as § 296-307-19015. 97-09-013, filed 4/7/97, effective 4/7/97. Statutory Authority: RCW 49.17.040, [49.17.]050 and [49.17.]060. 96-22-048, § 296-306A-19015, filed 10/31/96, effective 12/1/96.]

**WAC 296-307-19018 How must other portable grinders be guarded?** Other portable grinding machines must be guarded so that only the bottom half of the wheel is exposed. The top half of the wheel must be enclosed at all times.

[Recodified as § 296-307-19018. 97-09-013, filed 4/7/97, effective 4/7/97. Statutory Authority: RCW 49.17.040, [49.17.]050 and [49.17.]060. 96-22-048, § 296-306A-19018, filed 10/31/96, effective 12/1/96.]

**WAC 296-307-195 What rules apply to grounding and “dead man” controls for hand-held portable power tools?**

- (1) Each hand-held, power-driven tool must have a “dead man” control, such as a spring-actuated switch, valve, or equivalent device, so that the power will be automatically shut off whenever the operator releases the control.
- (2) The frames and all exposed, noncurrent-carrying metal parts of portable electric machinery, operated at more than fifty volts to ground, must be grounded. Other hand-held portable motors driving electric tools must be grounded if they operate at more than fifty volts to ground. The ground must use a separate ground wire and polarized plug and receptacle.

*Exception: Double insulated tools that are designed and used according to the requirements of Article 250-45 of the National Electrical Code (1971 edition) are exempt from the grounding requirements.*

[Recodified as § 296-307-195. 97-09-013, filed 4/7/97, effective 4/7/97. Statutory Authority: RCW 49.17.040, [49.17.]050 and [49.17.]060. 96-22-048, § 296-306A-195, filed 10/31/96, effective 12/1/96.]

**WAC 296-307-200 Compressed air.**

[Recodified as § 296-307-200. 97-09-013, filed 4/7/97, effective 4/7/97. Statutory Authority: RCW 49.17.040, [49.17.]050 and [49.17.]060. 96-22-048, § 296-306A-200, filed 10/31/96, effective 12/1/96.]



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**WAC 296-307-20005 May compressed air be used for cleaning?** Using compressed air for cleaning purposes is prohibited, except where the pressure is reduced to less than 30 psi and then only with effective chip guarding and personal protective equipment.

[Recodified as § 296-307-20005. 97-09-013, filed 4/7/97, effective 4/7/97. Statutory Authority: RCW 49.17.040, [49.17.]050 and [49.17.]060. 96-22-048, § 296-306A-20005, filed 10/31/96, effective 12/1/96.]

**WAC 296-307-20010 What requirements apply to compressed air tools?**

- (1) When using compressed air tools, use care to prevent the tool from being shot from the gun.
- (2) When momentarily out of use, the gun should be laid so that the tool cannot fly out if the pressure is accidentally released. When not in use, all tools should be removed from the gun.
- (3) When disconnecting a compressed air tool from the air line, first shut off the pressure and then operate the tool to release the pressure remaining in the hose.

- (4) Compressed air hose or guns must not be pointed at or brought into contact with the body of any person.
- [Recodified as § 296-307-20010. 97-09-013, filed 4/7/97, effective 4/7/97. Statutory Authority: RCW 49.17.040, [49.17.]050 and [49.17.]060. 96-22-048, § 296-306A-20010, filed 10/31/96, effective 12/1/96.]

**WAC 296-307-205 Guarding portable powered tools.**

[Recodified as § 296-307-205. 97-09-013, filed 4/7/97, effective 4/7/97. Statutory Authority: RCW 49.17.040, [49.17.]050 and [49.17.]060. 96-22-048, § 296-306A-205, filed 10/31/96, effective 12/1/96.]

**WAC 296-307-20505 What requirements apply to guarding portable powered tools?**

- (1) All portable, power-driven circular saws with a blade diameter greater than 2 inches must have guards above and below the base plate or shoe.
    - (a) The upper guard must cover the saw to the depth of the teeth, except for the minimum arc required to permit the base to be tilted for bevel cuts.
    - (b) The lower guard must cover the saw to the depth of the teeth, except for the minimum arc required to allow proper retraction and contact with the work.
    - (c) When the tool is withdrawn from the work, the lower guard must automatically and instantly return to covering position.
  - (2) Portable belt sanding machines must have guards at each nip point where the sanding belt runs onto a pulley. These guards must prevent the hands or fingers of the operator from coming in contact with the nip points. The unused run of the sanding belt must be guarded against accidental contact.
  - (3) Portable electric powered tools must meet the electrical requirements of chapter 296-307 WAC Part T.
- [Statutory Authority: Chapter 49.17.040 RCW. 98-24-096 (Order 98-13), § 296-307-20505, filed 12/01/98, effective 03/01/99. [Recodified as § 296-307-20505. 97-09-013, filed 4/7/97, effective 4/7/97. Statutory Authority: RCW 49.17.040, [49.17.]050 and [49.17.]060. 96-22-048, § 296-306A-20505, filed 10/31/96, effective 12/1/96.]

**WAC 296-307-20510 What requirements apply to switches and controls on portable powered tools?**

- (1) The following powered tools must have a constant pressure switch or control that will shut off the power when the pressure is released:
  - All hand-held powered circular saws with a blade diameter-greater than 2 inches;
  - Electric, hydraulic or pneumatic chain saws; and
  - Percussion tools without positive accessory holding means.

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**WAC 296-307-20510 (Cont.)**

All hand-held gasoline powered chain saws must have a constant pressure throttle control that will shut off the power to the saw chain when the pressure is released.

- (2) The following powered tools must have a constant pressure switch or control:

All hand-held powered drills, tappers, fastener drivers, and horizontal, vertical, and angle grinders with wheels greater than 2 inches in diameter;

- Disc sanders with discs greater than 2 inches in diameter;
- Belt sanders;
- Reciprocating saws;
- Saber, scroll, and jig saws with blade shanks greater than a nominal 1/4 inch; and
- Other similarly operating powered tools.

These tools may have a lock-on control if they can be turned off by a single motion of the same finger or fingers that turn it on.

- (3) The following powered tools must have either a positive on-off control, or other controls as described above:

All other hand-held powered tools, including:

- Platen sanders;
  - Grinders with wheels 2 inches in diameter or less;
  - Disc sanders with discs 2 inches in diameter or less;
  - Routers;
  - Planers;
  - Laminate trimmers;
  - Nibblers;
  - Shears; and
  - Saber, scroll, and jig saws with blade shanks a nominal 1/4 inch wide or less.
- (a) Saber, scroll, and jig saws with nonstandard blade holders may use blades with shanks that are nonuniform in width, if the narrowest portion of the blade shank is an integral part in mounting the blade.
- (b) Blade shank width must be measured at the narrowest portion of the blade shank when saber, scroll, and jig saws have nonstandard blade holders.
- (c) **“Nominal”** in this section means +0.05 inch.

- (4) The operating control on hand-held power tools must be located to minimize the possibility of accidental operation that would constitute a hazard to employees.

*Exception: This section does not apply to concrete vibrators, concrete breakers, powered tampers, jack hammers, rock drills, garden appliances, household and kitchen appliances, personal care appliances, or to fixed machinery.*

[Recodified as § 296-307-20510. 97-09-013, filed 4/7/97, effective 4/7/97. Statutory Authority: RCW 49.17.040, [49.17.]050 and [49.17.]060. 96-22-048, § 296-306A-20510, filed 10/31/96, effective 12/1/96.]

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**WAC 296-307-20515 What requirements apply to pneumatic powered tools and hose?**

- (1) The operating trigger on portable pneumatic powered tools must be located to minimize the possibility of accidental operation and arranged to close the air inlet valve automatically when the operator removes pressure.
- (2) A tool retainer must be installed on each tool that would otherwise be ejected from the hose.
- (3) Hose and hose connections used for conducting compressed air to utilization equipment must be designed for the pressure and service to which they are subjected.

[Recodified as § 296-307-20515. 97-09-013, filed 4/7/97, effective 4/7/97. Statutory Authority: RCW 49.17.040, [49.17.]050 and [49.17.]060. 96-22-048, § 296-306A-20515, filed 10/31/96, effective 12/1/96.]

**WAC 296-307-220 Power lawnmowers.**

[Recodified as § 296-307-220. 97-09-013, filed 4/7/97, effective 4/7/97. Statutory Authority: RCW 49.17.040, [49.17.]050 and [49.17.]060. 96-22-048, § 296-306A-220, filed 10/31/96, effective 12/1/96.]

**WAC 296-307-22003 What definitions apply to this section?**

**“Blade tip circle”** means the path described by the outermost point of the blade as it rotates about its shaft axis.

**“Catcher assembly”** means a part that provides a means for collecting grass clippings or debris.

**“Deadman control”** means a control designed to automatically interrupt power to a drive when the operator releases the control.

**“Guard”** means a part for shielding a hazardous area of a machine.

**“Lowest blade position”** means the lowest blade position when the mower is not in use.

**“Operator area”** (walk-behind mowers) means a circular area behind the mower that is no smaller than 30 inches in diameter, the center of which is 30 inches behind the nearest blade tip circle.

**“Power reel mower”** means a lawn-cutting machine with a power source that rotates one or more helically formed blades about a horizontal axis and creates a shearing action with a stationary cutter bar or bed knife.

**“Power rotary mower”** means a lawn-cutting machine with a power source that rotates one or more cutting blades about a vertical axis.

**“Riding mower”** means a powered, self-propelled lawn-cutting vehicle on which the operator rides and controls the machine.

**“Sulky type mower”** means a walk-behind mower that has been converted to a riding mower by the addition of a sulky.

**“Walk-behind mower”** means a mower either pushed or self-propelled and normally guided by the operator walking behind the unit.

[Recodified as § 296-307-22003. 97-09-013, filed 4/7/97, effective 4/7/97. Statutory Authority: RCW 49.17.040, [49.17.]050 and [49.17.]060. 96-22-048, § 296-306A-22003, filed 10/31/96, effective 12/1/96.]

**WAC 296-307-22006 What are the general guarding requirements for power lawnmowers?**

- (1) Walk-behind, riding-rotary, and reel power lawnmowers designed for use by employees must meet the design specifications in ANSI B71.1-1968.

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**WAC 296-307-22006 (Cont.)**

*Exception: These specifications do not apply to sulky-type mowers, flail mowers, sickle-bar mowers, or mowers designed for commercial use.*

- (2) All power-driven chains, belts, and gears must be positioned or guarded to prevent accidental contact with the operator during normal starting, mounting, and operation of the machine.
- (3) The motor must have a shut-off device that requires manual and intentional reactivation to restart the motor.
- (4) All positions of the operating controls must be clearly identified.
- (5) The words, "Caution — Be sure the operating control(s) is in neutral before starting the engine," or similar wording must be clearly visible at an engine starting control point on self-propelled mowers.
- (6) All power lawn mowers must be used according to the manufacturer's instructions.  
[Recodified as § 296-307-22006. 97-09-013, filed 4/7/97, effective 4/7/97. Statutory Authority: RCW 49.17.040, [49.17.]050 and [49.17.]060. 96-22-048, § 296-306A-22006, filed 10/31/96, effective 12/1/96.]

**WAC 296-307-22009 What rules apply to walk-behind and riding rotary mowers?**

- (1) The mower blade must be enclosed except on the bottom and the enclosure must extend to or below the lowest blade position.
- (2) Guards that must be removed to install a catcher assembly must meet the following requirements:
  - (a) Warning instructions are attached to the mower near the opening stating that the mower must not be used without either the catcher assembly or the guard in place.
  - (b) The mower is used only with either the catcher assembly or the guard in place.
  - (c) The catcher assembly is properly and completely installed.
- (3) The word "caution" or stronger wording must be placed on the mower at or near each discharge opening.
- (4) Blade(s) must stop rotating from the manufacturer's specified maximum speed within 15 seconds after declutching, or shutting off power.

[Recodified as § 296-307-22009. 97-09-013, filed 4/7/97, effective 4/7/97. Statutory Authority: RCW 49.17.040, [49.17.]050 and [49.17.]060. 96-22-048, § 296-306A-22009, filed 10/31/96, effective 12/1/96.]

**WAC 296-307-22012 What rules apply to walk-behind rotary mowers?**

- (1) The horizontal angle of the grass discharge opening(s) in the blade enclosure must not contact the operator area.
- (2) There must be one of the following at all grass discharge openings:
  - (a) A minimum of 3 inches between the end of the discharge chute and the blade tip circle; or
  - (b) A rigid bar fastened across the discharge opening, secured to prevent removal without the use of tools. The bottom of the bar must be no higher than the bottom edge of the blade enclosure.

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**WAC 296-307-22012 (Cont.)**

- (3) The highest point(s) on the blade enclosure front, except discharge-openings, must be a maximum of 1-1/4 inches above the lowest blade position. Mowers with a swingover handle are considered to have no front in the blade enclosure and therefore must comply with WAC 296-307-22009(1).
- (4) The mower handle must be fastened to the mower to prevent loss of control by unintentional uncoupling while in operation.
- (5) Mower handles must be locked in the normal operating position(s) so that they cannot be accidentally disengaged during normal mower operation.
- (6) A swingover handle must meet the requirements of this section.
- (7) Wheel drive disengaging controls, except deadman controls, must move opposite to the direction of the vehicle motion in order to disengage the drive. Deadman controls may operate in any direction to disengage the drive.
- (8) You must ensure that each walk-behind rotary mower has a positive constant-pressure device that requires the operator to hold the device in the "on" position to operate the mower. Using rope or string or other material to tie the constant pressure device in the "on" position is prohibited.

[Statutory Authority: Chapter 49.17.040 RCW. 98-24-096 (Order 98-13), § 296-307-22012, filed 12/01/98, effective 03/01/99. [Recodified as § 296-307-22012. 97-09-013, filed 4/7/97, effective 4/7/97. Statutory Authority: RCW 49.17.040, [49.17.]050 and [49.17.]060. 96-22-048, § 296-306A-22012, filed 10/31/96, effective 12/1/96.]

**WAC 296-307-22015 What rules apply to riding rotary mowers?**

- (1) The highest point(s) of all openings in the blade enclosure front must be a maximum of 1 1/4 inches above the lowest blade position.
- (2) Opening(s) must not allow grass or debris to discharge directly toward the operator seated in normal operator position.
- (3) There must be one of the following at all grass discharge openings:
  - (a) A minimum of 6 inches between the end of the discharge chute and the blade tip circle; or
  - (b) A rigid bar fastened across the discharge opening secured to prevent removal without the use of tools. The bottom of the bar must be no higher than the bottom edge of the blade enclosure.
- (4) Mowers must have stops to prevent jackknifing or locking of the steering mechanism.
- (5) The mower must have brakes.
- (6) Hand-operated wheel drive disengaging controls must move opposite to the direction of vehicle motion in order to disengage the drive. Foot-operated wheel drive disengaging controls must be depressed to disengage the drive. Deadman controls, both hand and foot operated, may operate in any direction to disengage the drive.

[Recodified as § 296-307-22015. 97-09-013, filed 4/7/97, effective 4/7/97. Statutory Authority: RCW 49.17.040, [49.17.]050 and [49.17.]060. 96-22-048, § 296-306A-22015, filed 10/31/96, effective 12/1/96.]

**WAC 296-307-225 Jacks.**

[Recodified as § 296-307-225. 97-09-013, filed 4/7/97, effective 4/7/97. Statutory Authority: RCW 49.17.040, [49.17.]050 and [49.17.]060. 96-22-048, § 296-306A-225, filed 10/31/96, effective 12/1/96.]

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**WAC 296-307-22503 What definitions apply to this section?**

**“Jack”** means an appliance for lifting and lowering or moving horizontally a load using a pushing force.

*Note: Jack types include lever and ratchet, screw, and hydraulic.*

**“Rating”** means the maximum working load for which a jack is designed to lift the load safely throughout its travel.  
[Recodified as § 296-307-22503. 97-09-013, filed 4/7/97, effective 4/7/97. Statutory Authority: RCW 49.17.040, [49.17.]050 and [49.17.]060. 96-22-048, § 296-306A-22503, filed 10/31/96, effective 12/1/96.]

**WAC 296-307-22506 How shall the rated load be marked on a jack?**

- (1) The operator must make sure that the jack used has a load rating sufficient to lift and sustain the load.
- (2) The rated load must be legibly and permanently marked in a prominent location on the jack by casting, stamping, or other suitable means.

*Note: You should follow the manufacturer’s specifications to raise the rated load of a jack.*

[Recodified as § 296-307-22506. 97-09-013, filed 4/7/97, effective 4/7/97. Statutory Authority: RCW 49.17.040, [49.17.]050 and [49.17.]060. 96-22-048, § 296-306A-22506, filed 10/31/96, effective 12/1/96.]

**WAC 296-307-22509 What rules apply to the operation and maintenance of jacks?**

- (1) If the foundation is not firm, you must block the base of the jack. If the cap might slip, you must place a block in between the cap and the load.
- (2) The operator must watch the stop indicator, which must be kept clean, in order to determine the limit of travel. The indicated limit must not be overrun.
- (3) After the load has been raised, it must immediately be cribbed, blocked, or otherwise secured. Working under a load raised only with jacks is prohibited.
- (4) Hydraulic jacks exposed to freezing temperatures must be supplied with an adequate antifreeze liquid.
- (5) All jacks must be properly lubricated at regular intervals. The lubricating instructions of the manufacturer should be followed, and only lubricants recommended by the manufacturer should be used.
- (6) You must ensure that each jack is thoroughly inspected according to the service conditions and at least:
  - (a) For constant or intermittent use at one locality, once every 6 months;
  - (b) For jacks sent out of shop for special work, when sent out and when returned;
  - (c) For a jack subjected to abnormal load or shock, immediately before and immediately thereafter.
- (7) Repair or replacement parts must be examined for possible defects.
- (8) Jacks that are out of order must be tagged, and not be used until repaired.

[Statutory Authority: Chapter 49.17.040 RCW. 98-24-096 (Order 98-13), § 296-307-22509, filed 12/01/98, effective 03/01/99.  
[Recodified as § 296-307-22509. 97-09-013, filed 4/7/97, effective 4/7/97. Statutory Authority: RCW 49.17.040, [49.17.]050 and [49.17.]060. 96-22-048, § 296-306A-22509, filed 10/31/96, effective 12/1/96.]

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**WAC 296-307-230 What are the general requirements for materials handling and storage?**

- (1) Safe clearances of three feet must be allowed for aisles, loading docks, doorways, and wherever turns or passage must be made. Passageways must be kept clear and in good repair, with no obstructions.
- (2) Bags, bales, boxes, and other containers stored in tiers must be made secure against sliding or collapse.
- (3) Storage areas must be kept free from any accumulation of materials that could cause tripping, fire, or explosion.
- (4) Employees must be instructed in proper lifting or moving techniques and methods. Mechanical devices or assistance in lifting must be used when moving heavy objects.
- (5) When removing material stored in piles, employees must remove material in a manner that maintains the stability of the pile and prevents collapse.
- (6) Storage areas must have proper drainage.
- (7) You must provide clearance signs to warn of clearance limits.

(8) For powered industrial truck (forklift) requirements, see WAC 296-307-520.

[Statutory Authority: Chapter 49.17.040 RCW. 98-24-096 (Order 98-13), § 296-307-230, filed 12/01/98, effective 03/01/99.  
[Recodified as § 296-307-230. 97-09-013, filed 4/7/97, effective 4/7/97. Statutory Authority: RCW 49.17.040, [49.17.]050 and [49.17.]060. 96-22-048, § 296-306A-230, filed 10/31/96, effective 12/1/96.]

**WAC 296-307-232 What requirements apply to conveyors?** Conveyors must be constructed, operated, and maintained according to ANSI B 20.1-1957.

- (1) When the return strand of a conveyor operates within seven feet of the floor, there must also be a trough strong enough to carry the weight resulting from a broken chain.
- (2) If the strands are over a passageway, a means must be provided to catch and support the ends of the chain in the event of a break.
- (3) When the working strand of a conveyor crosses within three feet of the floor level in passageways, a bridge must be provided for employees to cross over the conveyor.
- (4) Whenever conveyors pass adjacent to or over working areas or passageways, protective guards must be installed. These guards must be designed to catch and hold any load or materials that may fall off or dislodge and injure an employee.
- (5) Employees must be prohibited from walking on the rolls of roller-type conveyors. If employees must walk on roller-type conveyors because of an emergency, the conveyor must be shut off first.
- (6) Guards, screens, or barricades that are strong enough to prevent material from falling must be installed on all sides of the shaftway of elevator-type conveyors except at openings where material is loaded or unloaded. Automatic shaftway gates or suitable barriers must be installed at each floor level where material is loaded or unloaded from the platform.
- (7) Conveyors must have an emergency stopping device that can be reached from the conveyor. The device must be located near the material entrance to each chopper, mulcher, saw, or similar equipment. The device must be located so that it can stop the conveyor before an employee enters the point of operation of the machine fed by the conveyor.

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**WAC 296-307-232 (Cont.)**

*Exception: The emergency stopping device is not required where the conveyor leading into the equipment is under constant control of an operator with full view of the material entrance and the conveyor is located where the operator cannot fall onto it.*

- (8) Where conveyors are over seven feet high, means must be provided to safely permit essential inspection and maintenance operations.
- (9) Any part showing signs of significant wear must be inspected carefully and replaced before it creates a hazard.
- (10) Replacement parts must be equal to or exceed the manufacturer's specifications.

[Statutory Authority: Chapter 49.17.040 RCW. 98-24-096 (Order 98-13), § 296-307-232, filed 12/01/98, effective 03/01/99.

[Recodified as § 296-307-232. 97-09-013, filed 4/7/97, effective 4/7/97. Statutory Authority: RCW 49.17.040, [49.17.]050 and [49.17.]060. 96-22-048, § 296-306A-232, filed 10/31/96, effective 12/1/96.]